

Serial No. 10/031,276

Amendment and Response to Office Action of August 17, 2004

Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

1. (Original) A method for making a heat transfer assembly having predictable and repeatable heat transfer rates, the assembly being adapted for mounting on a pipe, equipment or a vessel, comprising the steps of:

 providing a tubular element;

 covering the tubular element with a layer of insulating material;

 wrapping the layer of insulating material with a tape-like material; and

 tensioning the tape-like material so that the insulating material is compressed by the tape-like material to a predetermined diameter for providing a desired conductance output.
2. (Original) The method of claim 1, wherein the conductance output falls within a range of approximately 0.105 Btu/hr-ft-°F to approximately 0.46 Btu/hr-ft-°F.
3. (Original) The method of claim 1, further comprising applying an outer jacket material over the tape-like material.
4. (Original) The method of claim 1, wherein the tubular element is made of copper, steel, stainless steel, aluminum or other metallic or plastic materials suitable for use with saturated steam or other hot fluids.

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5. (Original) The method of claim 1, wherein the insulating material is a flexible, compressible fiberglass or mineral wool.

6. (Original) The method of claim 1, wherein the insulating material is wrapped around the tubular element by a linear wrapping method.

7. (Original) The method of claim 1, wherein the insulating material is wrapped around the tubular element by a helical wrapping method.

8. (Original) The method of claim 1, wherein the insulating material is wrapped around the tubular element by a combination of the linear wrapping and helical wrapping methods where multiple layers of insulating material is required.

9. (Original) The method of claim 1, wherein the tape like material is an aluminized polymeric material or other types of metalized or unmetalized polymeric tapes, cords, fibers, or strips.

10. (Original) The method of claim 3, wherein said outer jacket material is an extruded silicone rubber.

11. (cancelled)

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12. (cancelled)

13. (cancelled)

14. (Original) An isolated tracer, comprising:

a tube for conveying a heated fluid;

a layer of insulation covering the tube; and

a tape-like material wrapped around the insulation such that the insulation is compressed to a desired, predetermined thickness for providing a desired conductance rate.

15. (Original) The isolated tracer of claim 14, further comprising a jacket of polymeric material covering the tape-like material.

16. (Original) A method for making an isolated tracer having a predictable conductance rate, comprising the steps of:

passing a tube for conveying a heated fluid through a funnel-shaped die having a wide inlet and a narrow outlet;

passing an insulating material through the die such that the insulating material is compressed a first amount as the insulating material passes from the wide inlet of the die to the narrow outlet for conforming the insulating material to a cylindrical shape; and

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compressing the insulating material a second amount after the insulating material passes through the narrow outlet for providing a predetermined thickness of insulating material so that a predetermined thermal conductance rate can be provided.

17. (Original) The method of claim 16, wherein the step of compressing the insulating material is provided by wrapping the insulating material with a tape-like material.

18. (Original) The method of claim 17, further comprising adjusting the tension on the tape-like material to provide a desired compression on the insulating material.

19. (Original) The method of claim 18, further comprising covering the tape-like material with a jacket of polymeric material.

20. (cancelled)

21. (currently amended) A method for making an isolated tracer having a predictable conductance rate, comprising the steps of:

passing a tube for conveying a heated fluid through a funnel-shaped die having a wide inlet and a narrow outlet;

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passing an insulating material through the die such that the insulating material is compressed a first amount as the insulating material passes from the wide inlet of the die to the narrow outlet for conforming the insulating material to a cylindrical shape; and

compressing the insulating material a second amount after the insulating material passes through the narrow outlet for providing a predetermined thickness of insulating material so that a predetermined thermal conductance rate can be provided ~~The method of claim 16,~~ wherein the difference in compression on the insulating material between the first amount and the second amount increases thermal conductance by at least 10 percent.

22. (New) A method for making an isolated tracer having a predictable conductance rate, comprising the steps of:

passing a tube for conveying a heated fluid through a funnel-shaped die having a wide inlet and a narrow outlet;

passing an insulating material through the die such that the insulating material is compressed a first amount as the insulating material passes from the wide inlet of the die to the narrow outlet for conforming the insulating material to a cylindrical shape; and

compressing the insulating material a second amount after the insulating material passes through the narrow outlet for providing a predetermined thickness of insulating material;

determining the conductance rate of the isolated tracer by testing; and

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changing a tension on a tape-like material in order to control the amount of compression on the insulating material so that a desired thermal conductance rate is provided.

23. (New) A method for making a heat transfer assembly having predictable and repeatable heat transfer rates, the assembly being adapted for mounting on a pipe, equipment or a vessel, comprising the steps of:

providing a tubular element;

covering the tubular element with a layer of insulating material;

calculating an approximate conductance rate (C_T): $C_T = C_{T \text{ base}} \times [1 + \text{Outside Pipe Diameter, inches}]^{\text{exp}} \times \text{Number of tracers}$, where C_T for pipes and cylindrical objects equivalent to or larger than a nominal pipe size of 10 inches is the same as C_T calculated for a 10-inch pipe size, where $C_{T \text{ base}}$ is one of the group consisting of 0.15, 0.23, and 0.35, where a corresponding exp is one of the group consisting of 0.09, 0.125, and 0.20;

wrapping the layer of insulating material with a tape-like material; and

tensioning the tape-like material so that the insulating material is compressed by the tape-like material to a predetermined diameter for providing a desired conductance output.